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SOY BEAN (*Glycine hispida*).

The soy bean is an annual, erect, rather hairy legume, resembling the cowpea in a general way but never viny in habit. It is a native of eastern Asia, where it is very extensively grown, principally as human food. In the United States it has been grown in a limited way for many years as a forage crop, but its value is such that it should be very largely grown, especially in the South. It has advantages over cowpeas in that it is more nutritious either as hay or as silage, and the seed is weevil proof. It has not the ability of the cowpea to choke out weeds, and should therefore be cultivated. Soy beans are decidedly drought resistant, but rabbits are so partial to their foliage that the crop is seldom a success in the semiarid regions. The yield of soy-bean hay per acre is about equal to that of cowpeas. The seed yield is usually smaller, but soy beans are easily harvested with machinery. For hay, soy beans should be cut while the pods are still soft and green.

Soy-bean seed should be secured from a source as near as possible to the place where it is to be planted. Southern seed planted in the North tends to make the crop later, and northern seed planted in the South makes it earlier.

Seeding.—Planting in rows about 30 inches apart is by far the most common way of growing soy beans. They may also be seeded broadcast or drilled, and this is often the best way if intended for hay and the land is not weedy. When planted in rows the seeding should be thick enough to give a plant every 2 or 3 inches, and a bushel of seed will plant 3 to 5 acres. A bushel or more of seed is required per acre when sown broadcast. Seeding may be done any time after the soil is well warmed in the spring.

Inoculation.—Soy beans when well inoculated add much more nitrogen to the soil than cowpeas. There is, however, considerable difficulty in getting the plants inoculated on new soil. When once the tubercles have appeared on the roots the following crops are sure to be well inoculated. Inoculation may often be secured by using artificial cultures of the bacteria or by applying soil from an old soy-bean patch.

Varieties.—At the present time there are seven varieties of soy beans handled by seedsmen, though about 22 distinct sorts are known. There are four distinct groups, distinguished by the color of the seed; namely, yellow, green, brown, and black. In each of these groups there are two or more promising varieties, early and late. For hay the Mammoth and Guelph varieties are best; for grain the Guelph and Ito San varieties yield about equally. Following is a brief description of the varieties:

Mammoth (yellow).—This is the largest of the commercial soy beans, often growing 36 to 40 inches high on relatively poor soil. It holds its leaves well even after the first frost. It is a very late bean, as frost nearly always nips it at Washington before maturing, and it can not be expected to mature seed north of Virginia and Tennessee. The seed is medium in size and the yield large. It is a valuable bean to grow for hay or other forage and in the South for grain.

Hollybrook (yellow).—This variety is also a large grower, though not as large as the Mammoth variety. It usually matures a crop of seed at Washington by about October 1, and can be grown to advantage as far north as Illinois and Massachusetts. It is suitable for forage and is a good grain producer, though the seed is small.

Ito San (yellow).—This is the most common soy bean on the market, being sold under various names, as Early Yellow, Dwarf Early, Early White, and Ito San. It is a smaller grower than the Hollybrook variety and is therefore not very satisfactory for forage, but is an excellent grain producer. The seed is very nearly the same size and color as that of the Mammoth variety. It matures very early and can be grown well into the Northern States.

Guelph (green).—This is quite commonly known on the market as Large Medium Green. It is perhaps the best all-round soy bean on the market. It makes a large growth, about like the Hollybrook variety, yields seed very heavily, has a splendid leaf system, and makes excellent forage. The seed is medium sized. Practically its only drawback is the shattering of the seed when ripe, and it must therefore be handled with care in harvesting. It is nearly as early as the Ito San variety.

Samarow (green).—The Samarow is not very generally grown and is hardly as promising as other varieties. It is not a very rank grower, though it yields seed quite heavily. It matures at about the same time as the Ito San variety and can therefore be grown well to the North. The seeds are average in size, but longer than other varieties.

Ogemaw (brown).—This variety is the earliest of the commercial soy beans and can be grown satisfactorily as far north as Michigan. It is a small-growing plant, but yields quite heavily in seed, and it is therefore best to grow it for grain. The seeds are considerably larger than any other except the Buckshot variety.

Buckshot (black).—This is the smallest growing of the commercial soy beans. It yields fair crops of seed and matures in about the same length of time as the Ito San and Samarow varieties. It is the largest seeded soy bean now on the market.

